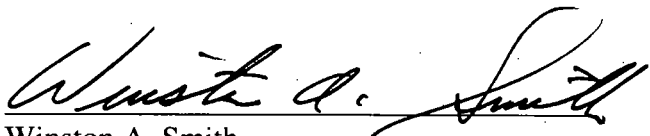


## **Preliminary Close out Report (PCOR)**

### **Robins Air Force Base, Georgia**

 9/30/04

Winston A. Smith

Director, Waste Management Division

United States Environmental Protection Agency, Region 4



DOCKET NO. 610274

## **I. INTRODUCTION**

This Preliminary Close Out Report documents that the United States Air Force (AF) has completed construction activities for the Robins Air Force Base (RAFB) Operable Units (OU) 1 and 3 in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-p). EPA and the AF conducted a pre-final inspection on January 8, 2004, and determined that the remedy has been completed in accordance with the remedial design (RD) plans and specifications. EPA and the AF have initiated the activities necessary to achieve performance standards and site completions.

The OU1 remediation remedies have been found to be effective in circumventing rainwater infiltration through contaminated soils. The remediation remedies at OU3 have been effective in removing groundwater contamination. Groundwater monitoring to date continues to demonstrate that the remedies have been successful.

## **II. SUMMARY OF SITE CONDITIONS**

### **Background**

Robins AFB (RAFB) is an 8,855-acre facility located approximately 18 miles south of Macon, Georgia. The facility acts as a worldwide logistics management center for aircraft, missiles, and support systems and is a major repair center for aircraft and airborne electronic systems.

A basewide survey was conducted in 1982 to identify and assess past practices for disposing of hazardous waste. Disposal areas were grouped into eight zones that were based primarily on location and type of disposal activity. The 1982 survey indicated that Zone 1 was considered to have the highest potential for migration of hazardous substances and, as a result, was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priority List (NPL) by EPA in 1987.

Zone 1 is located approximately 4,500 feet east of Georgia Highway 247 in the central portion of the base. An adjacent bluff forms the western boundary of the Ocmulgee River flood plain. The flood plain extends about 1 to 2 miles eastward to the river. Zone 1 consists of two Installation Restoration Program (IRP) sites and an adjacent wetland. The two IRP sites are Landfill No. 4 and Sludge Lagoon WP14. Zone 1 is also divided into three OUs. OU1 is defined as Landfill No. 4 and the Sludge Lagoon source units. OU2 is defined as the wetlands contaminated by the Landfill No. 4 and Sludge Lagoon source units. OU3 is defined as the groundwater contaminated by the Landfill No. 4 and Sludge Lagoon source units. In 2002, EPA determined that OU2 contamination was not coming from the other operable units. It was thereafter deferred to the RCRA Corrective Action Program under authority of the Georgia Environmental Protection Division. This PCOR addresses only OU1 and OU3.

RAFB has generated various types of solid wastes including refuse and hazardous wastes over the years of operation. The hazardous waste includes electroplating waste containing heavy metals and cyanide, organic solvents from cleaning operations and fire training exercises, and off-specification chemicals, such as pesticides.

Landfill No. 4, a 45-acre landfill, operated from 1965 to 1978 for disposal of general refuse and industrial wastes. Sludge Lagoon WP-14 is a 1.5-acre unlined lagoon used from 1962 to 1978 for disposal of industrial waste treatment plant sludges. The sludge from the industrial waste treatments plants contained phenols, oils, and other wastes. Electroplating sludge from Industrial Waste Treatment Plant 2 that was disposed of in the lagoon contained heavy metals and cyanide. Miscellaneous industrial wastes, such as solvents, cleaners, paint removers, hydraulic fluids, and oils, were also placed in the lagoon. Sludge Lagoon WP14 was closed in 1978 by capping with a clayey sand cover approximately 5 feet thick.

In June of 1989 RAFB entered into a Federal Facilities Agreement (FFA) with the Georgia Environmental Protection Division (Georgia EPD) and the EPA to establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site in accordance with CERCLA National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Superfund guidance and policy, and Georgia Hazardous Waste Management Act (GHWMA).

Soils in Landfill No. 4 and Sludge Lagoon WP14 were found to contain constituents at concentrations sufficient to leach to the groundwater at levels higher than the maximum contaminant levels (MCLs). The primary contaminants present at the site are metals and volatile organic compounds (VOCs), primarily trichloroethylene (TCE). Due to this impact, Interim Remedial Actions were conducted for OU1 and OU3. The Interim Record of Decisions (IRODs) for OU1 and OU3 were issued in 1991 and 1995, respectively.

According to the IROD, the selected remedy for OU1 included the following:

- Surface water run-on diversion
- Landfill No. 4 cover renovation including clearing, filling, regrading, addition of soil and clay cover material, and seeding
- Leachate control for Landfill No. 4 and treatment at Robins AFB
- Sludge Lagoon groundwater collection and treatment at Robins AFB
- Treatment of the Sludge Lagoon to remove VOCs, followed by solidification for the immobilization of metals
- Environmental monitoring to determine effectiveness of the remedial action.

The remedial designs for OU1 began in August 1991 and were completed in March 1997. The remedial actions were started in December 1991, and completed in September 1998.

The selected interim remedy for OU3 included the extraction of groundwater from at least two wells at the toe of Landfill No. 4, treatment of the extracted groundwater in a new treatment system that can meet standards for discharge to the Ocmulgee River and discharge of the treated

effluent to the Ocmulgee River under a revised National Pollutant Discharge Elimination System (NPDES) permit. The remedy design for OU3 was started in March 1996, and completed in December 1996. The remedial action construction was completed in October 1997.

### **Remedial Construction Activities**

A cover renovation for Landfill No. 4 began in August 1997. In September 1998, the cover renovation was completed for Landfill No. 4 that consisted of a geosynthetic fabric and clay liner, which were installed over the entire surface area of Landfill No. 4 including Sludge Lagoon WP14. The design of the landfill cover complied with the cover requirements of the IROD and consists of site grading, a gas collection system, a geosynthetic clay liner, a drainage layer system, and topsoil. The soil cover installed over Landfill No. 4 also extends over Sludge Lagoon WP14.

RAFB began remedial action of Sludge Lagoon WP14 in October 1992 and completed in September 1996. The waste mass was first treated by in-situ volatilization then excavated and solidified. Run-on control actions at Landfill No. 4 began in February 1992 and completed June 1992. RAFB constructed a run-on diversion structure around the southwest corner of the landfill.

A full-scale leachate collection system was installed in 1997 and completed in February 1998. RAFB collected leachate from Landfill No. 4 via a pilot leachate collection system through July 1997. An expanded leachate collection toe-drain was installed around the eastern perimeter of Landfill No. 4 and became operational with startup of the OU3 Groundwater Treatment System (GWTS) on October 15, 1997.

In June 1996 RAFB began construction of a groundwater (OU3) extraction and treatment system which was completed in October 1997. The operating scheme can be modified from the existing system as long as at least two extraction wells operate and provide containment as per the IROD. Remedial Action Objectives include both containment of the plume and restoration of the groundwater to Federal MCLs. From October 1997 to November 2003, the containment wells and the toe drain of Landfill No. 4 have removed a total of approximately 267 pounds of TCE from the groundwater.

Since the implementation of the IRODs, erosion on the landfill (OU1) has been noted several times; therefore regrading and reseeded were conducted in August 2000. There were several electrical outages triggered by lightning or defects in the groundwater pumping system (OU3) which were remedied in 1999.

### **III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL**

Construction activities at the site were consistent with the IRODs and the RDs. EPA and Georgia EPD quality assurance/quality control (QA/QC) procedures were followed during construction and sampling activities. The subcontractor for construction adhered to the approved construction quality control plans (CQCP), which incorporated EPA and State requirements. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the construction drawings, technical specification and CQAP.

The Operations and Maintenance (O&M) Plan incorporates EPA and State QA/QC procedures and protocol. RAFB has a contractor to perform O&M activities at the site. O&M activities include:

- Monthly inspections of the landfill cap, gas vents, and surface water drainage system
- Periodic inspections of the pumping stations
- Daily inspections of all groundwater treatment plant equipment
- Biannual sampling of the groundwater monitoring wells

EPA analytical methods are used for all confirmation and monitoring samples.

### **IV. FINAL RECORD OF DECISION**

A Proposed Plan for the final remedy at OU1 and OU3 was finalized in 1999 after a public comment period and meeting. A Final Record of Decision for OU1 and OU3 was signed on September 30, 2004. The ROD selects the engineering and construction of the interim remedial actions agreed on in the 1991 and 1995 IRODs and added Institutional Controls to complete the selected final remedy. Institutional Controls were detailed in the ROD, superceding the need for a subsequent remedial design document.

The institutional controls are designed to 1) maintain the function of the engineered landfill cap, and 2) prevent inappropriate land and groundwater use. They include:

- a) Limited access by fencing and gates (in place)
- b) Signage (in place)
- c) Weekly inspections, annual reports, cap repair
- d) Use restrictions in base master plan, including limits on groundwater extraction
- e) Proper notification of EPA and Georgia EPD upon land use changes

Most of these ICs were implemented several years ago and are formalized in the final Record of Decision.

## **V. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION**

The following Table identifies the schedule of activities remaining.

Task	Estimated Completion	Responsible Organization
Remedial Action Completion Report		EPA/Georgia EPD
Groundwater Monitoring		RAFB
Approve Final Close Out Report (FCOR)	12/31/15	EPA
Five-Year Review Report	9/30/09	RAFB
Site Deletion from NPL	TBD	EPA/ Georgia EPD

## VI. SUMMARY OF REMEDIATION COSTS

The costs associated with the remedial design of selected remediation actions were researched; however this information could not be found due to its age. The following table summarizes project costs incurred to perform other phases of remediation activities at the site.

Event	Cost
RA Construction	\$18,957,416
Operations and Maintenance	\$4,455,954
Groundwater Monitoring	\$5,231,642

## VII. FIVE-YEAR REVIEW

The 1991 IROD for OU1 and 1995 IROD for OU3 stated that because the selected remedies would result in hazardous substances remaining on the site above health-based levels, a policy review of the Site would be conducted within five years of the initiation of the remedial actions. Such a review shall be conducted in accordance with EPA guidance set forth in *Structure and Components of Five-Year Reviews*, May 23, 1991, OSWER Directive 9355.7-02 and *Supplemental Five-Year Review Guidance*, OSWER Directive 9355.7-02A, to ensure that the remedies continue to provide adequate protection to human health and the environment.

A five-year review of the site was conducted in March, 2001. EPA plans to conduct and complete the next five-year review by September, 2009.

## VIII. BIBLIOGRAPHY

Department of the Air Force Headquarters Robins Air Logistics Center (AFMC). 1991. Correspondence from Patrick M. Tobins, Deputy Regional Administrator, EPA Region IV Re. *Interim Remedial Action Record of Decision for the Zone 1 Robins Air Base Nation Priorities List Site*. June 26, 1991. – Prepared for Major General Richard F. Gillis, Commander, Environmental Restoration Division.

Department of the Air Force Headquarters Robins Air Logistics Center (AFMC). 1993. Correspondence from William L. Downs, Acting Chief, Environmental Restoration Division Re. *Notification of Completion of Landfill 4 Run-On Control Construction*. August 9, 1993. – Prepared for Elizabeth Wilde, RAFB Remedial Project Manager of EPA Region IV RCRA and Federal Facilities Branch.

Department of the Air Force Headquarters Robins Air Logistics Center (AFMC). 1997. Correspondence from Jean R. Hagood, Director, Environmental Restoration Division Re. *OU3 Groundwater Treatment Plant Construction Status*. August 8, 1997. – Prepared for Brent Rabon, Georgia Environmental Protection Division.

Department of the Air Force Headquarters Robins Air Logistics Center (AFMC). 1998. Correspondence from Jean R. Hagood, Director, Environmental Management Re. *Notification of Completion of Landfill No. 4 Cover Renovation*. August 14, 1998. – Prepared for Elizabeth Wilde, RAFB Remedial Project Manager of EPA Region IV RCRA and Federal Facilities Branch.

Environmental Chemical Corporation (ECC), 1997. *Final Remedial Action Work Plan, Cover Renovation of Landfill 04*. August 20, 1997; Rev. September 22, 1997. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Logistics Center

Earth Tech, 1998. *OU3 Groundwater Treatment System Startup Report*. January 1998. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2000. *Semi-Annual Progress Report December 1999 – May 2000 for SWMU 4/LF04 OU3 Interim Record of Decision; SWMU 20/OT20 Corrective Action Plan; SWMUs 3,6, and 13/LF03 Corrective Action Plan; SWMUs 17 and 24/OT17 Corrective Action Plan and Groundwater Treatment System*. October 2000. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2000. *Final Record of Decision The NPL Site, Operable Units 1 and 3*. November 2000. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base



Earth Tech, 2000. *Final Basewide Groundwater Sampling Spring 2000*. December 2000. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base.

Earth Tech, 2001. *Five-Year Review Report*. March 2001. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2001. Correspondence Re: *Five-Year Review Report*. April 6, 2001. – Prepared for Mr. Bill Downs of Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2001. *Annual Progress Report December 2000 – May 2001 for SWMU 4/LF04 OU3 Interim Record of Decision; SWMU 20/OT20 Corrective Action Plan; SWMUs 3,6, and 13/LF03 Corrective Action Plan; SWMUs 17 and 24/OT17 Corrective Action Plan and Groundwater Treatment System*. October 2001. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2001. *Final Basewide Groundwater Sampling Spring 2001*. December 2001. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2001. Correspondence Re: *Final Basewide Groundwater Sampling Spring 2002 Report*. December 12, 2003. – Prepared for Mr. Fred Otto of Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2002. *Final Basewide Groundwater Sampling Spring 2002*. December 2002. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2002. Correspondence Re: *Final Basewide Groundwater Sampling Spring 2002 Report*. December 11, 2003. – Prepared for Mr. Fred Otto of Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2003. *Final Basewide Groundwater Sampling Spring 2003*. December 2003. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2003. Correspondence Re: *Final Basewide Groundwater Sampling Spring 2003 Report*. December 5, 2003. – Prepared for Mr. Fred Otto of Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2004. *Annual Progress Report December 2001 – November 2002 for SWMU 4/LF04 OU3 Interim Record of Decision; SWMU 20/OT20 Corrective Action Plan; SWMUs 3,6, and 13/LF03 Corrective Action Plan; SWMUs 17 and 24/OT17 Corrective Action Plan; SWMU 62/OT37 Corrective Action Plan; SWMUs 57 and 61/OT41 Corrective Action Plan; and*

*Groundwater Treatment System*. January 2004. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2004. *Semi-Annual/Annual Progress Report June– November 2001 for SWMU 4/LF04 OU3 Interim Record of Decision; SWMU 20/OT20 Corrective Action Plan; SWMUs 3,6, and 13/LF03 Corrective Action Plan; SWMUs 17 and 24/OT17 Corrective Action Plan and Groundwater Treatment System*. January 2004. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech, 2004. *Annual Progress Report December 2002 – November 2003 for SWMU 4/LF04 OU3 Interim Record of Decision; SWMU 20/OT20 Corrective Action Plan; SWMUs 3,6, and 13/LF03 Corrective Action Plan; SWMUs 17 and 24/OT17 Corrective Action Plan; SWMU 62/OT37 Corrective Action Plan; SWMUs 57 and 61/OT41 Corrective Action Plan; and Groundwater Treatment System*. March 2004. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech and Rust Environment & Infrastructure (Rust E&I), 1998. *Greater Base Industrial Area TCE Groundwater Contamination (SWMU OT 20) Interim Measures and OU3 Groundwater Treatment System 3<sup>rd</sup> Quarter Progress Report Summer 1998*, October 1998. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech and Rust Environment & Infrastructure (Rust E&I), 1999. *Greater Base Industrial Area TCE Groundwater Contamination (SWMU OT 20) Interim Measures and OU3 Groundwater Treatment System Semi-Annual Progress Report Winter/Spring 1999*, October 29 1999. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech and Rust Environment & Infrastructure (Rust E&I), 1999. *Basewide Groundwater Sampling Spring 1999*, December 1999. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech and Rust Environment & Infrastructure (Rust E&I), 1999. Correspondence Re: *Final Basewide Groundwater Sampling Spring 1999 Report*. December 15, 1999. – Prepared for Mr. Fred Otto of Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Earth Tech and Rust Environment & Infrastructure (Rust E&I), 2000. *Quarterly Operations and Maintenance Report Robins AFB Landfill No. 4 First and Second Quarters 1999*, June 2000. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Georgia Department of Natural Resources. 1991. Correspondence from Harold F. Reheis, Assistant Director of Hazardous Waste Management Branch, Re. *Interim Remedial Action Record of Decision for Operable Unit, Zone 1*. June 26, 1991. – Prepared for Major General

Richard F. Gillis, Commander of Environmental Management at AFMC.

Georgia Department of Natural Resources. 1996. Correspondence from Harold F. Reheis, Assistant Director of Hazardous Waste Management Branch, Re. *Operable Unit 3 Groundwater Treatment System Design; Robins Air Force Base; EPA ID No. GA1 570 024 330*. June 11, 1996. – Prepared for Jean Hagood, Director of Environmental Management at AFMC.

Georgia Department of Natural Resources. 1997. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *Final Sludge Lagoon Remedial Action/Post-Remediation Report dated January 30, 1997; Robins Air Force Base; EPA ID No. GA1 570 024 330*. February 5, 1997. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 1997. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *Response to Comments (Hagood to Rabon) dated May 16, 1997; Landfill 04 Cover Renovation Technical Specifications and Design Drawings (90% Remedial Design) dated February 14, 1997; Robins Air Force Base; EPA ID No. GA1 570 024 330*. February 5, 1997. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 1997. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *Draft Final Remedial Action Work Plan for Landfill 04[Solid Waste Management Unit (SWMU 4)] Cover Renovation dated August 20, 1997 and correspondences (Hagood to Rabon) dated September 10, 1997 and October 6, 1997; Robins Air Force Base; EPA ID No. GA1 570 024 330*. October 15, 1997. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 1999. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *Final Post Remedial Action Report for Landfill No. 4 [Solid Waste Management Unit (SWMU) 4] dated March 1999; Robins Air Force Base; EPA ID No. GA1 570 024 330*. May 7, 1999. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 2000. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *1999 Annual Operation and Maintenance (O&M) Report for Operable Unit (OU)1 and the National Priority List (NPL) site dated June 2000; Robins Air Force Base; EPA ID No. GA1 570 024 330*. August 15, 2000. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 2001. Correspondence from Harold F. Reheis, Director, Re. *Final Record of Decision (ROD) for Operable Unit Nos. 1 & 3 dated November 2000; Robins Air Force Base; EPA ID No. GA1 570 024 330*. June 26, 2001. – Prepared for Mr. A. Stanley Meiburg, Acting Regional Administrator or Environmental Protection Agency Region IV.

Georgia Department of Natural Resources. 2001. Correspondence from Bruce Khaleghi, Unit Coordinator of Hazardous Waste Management Branch, Re. *Calendar Year 2000 Annual Operation and Maintenance (O&M) Report for Operable Unit (OU) 1 at the National Priority List (NPL) Site dated May 2001; Robins Air Force Base; EPA ID No. GA1 570 024 330*. November 28, 2001. – Prepared for Bill Downs, Remedial Project Manager of Environmental Management at AFMC.

Georgia Department of Natural Resources. 2002. Correspondence from Brent Rabon, Unit Coordinator of Hazardous Waste Management Branch, Re. *Calendar Year 2001 Annual Operation and Maintenance (O&M) Report for Operable Unit (OU) 1 at the National Priority List (NPL) Site dated May 2002; Robins Air Force Base; EPA ID No. GA1 570 024 330*. July 26, 2002. – Prepared for Fred Otto, Project Manager of Environmental Management at AFMC.

Hazardous Waste Remedial Actions Program (HAZWRAP), 1996. *Sludge Lagoon Remediation Post Closure Report*. November 6, 1996 – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Logistics Center

Installation Restoration Program (IRP), 1992. *Landfill No. 4 Run-on Control Technical Specifications Final*. May 12, 1992.

Installation Restoration Program (IRP), 1992. *Landfill No. 4 Leachate Collection System Subcontractor Procurement Documents*. June 19, 1992

Installation Restoration Program (IRP), 1993. *Landfill No. 4 Cover Renovation Design Analyses Calculations*. July 8, 1993.

Installation Restoration Program (IRP), 1993. *Landfill No. 4 Cover Renovation Design Technical Specifications*. July 8, 1993

Installation Restoration Program (IRP), 1993. *Landfill No. 4 Full-Scale Leachate Collection System Phase II Technical Specifications Final Submittal*. August 27, 1993

Installation Restoration Program (IRP), 1996. *Landfill No. 4 Landfill No. 4 Full Scale Leachate Collection System Phase II Technical Specifications Final Design* July 12, 1996.

Installation Restoration Program (IRP), 1997. *Landfill 04 Redesign Cover Renovation, Robins Air Force Technical Specifications*. May 27, 1997

Installation Restoration Program (IRP), 1991. *Superfund Record of Decision, Robins Air Force Base, Zone 1, Operable Unit 1*. June 1991

Installation Restoration Program (IRP), 1995. *Superfund Interim Record of Decision, Robins Air Force Base, Zone 1, Operable Unit 3*. August 3, 1995

MARCOR Environmental, Inc. 1996. *Remedial Action Work Plan for OU3 Groundwater*

*Treatment System Project and Full-Scale Leachate Collection System Project.* November 1996.

Rust Environment & Infrastructure (Rust E&I), 1996. *Final Project Specifications for OU3 Ground Water Remedial Design and Base Industrial Area Interim Corrective Measures*, May 24, 1996. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

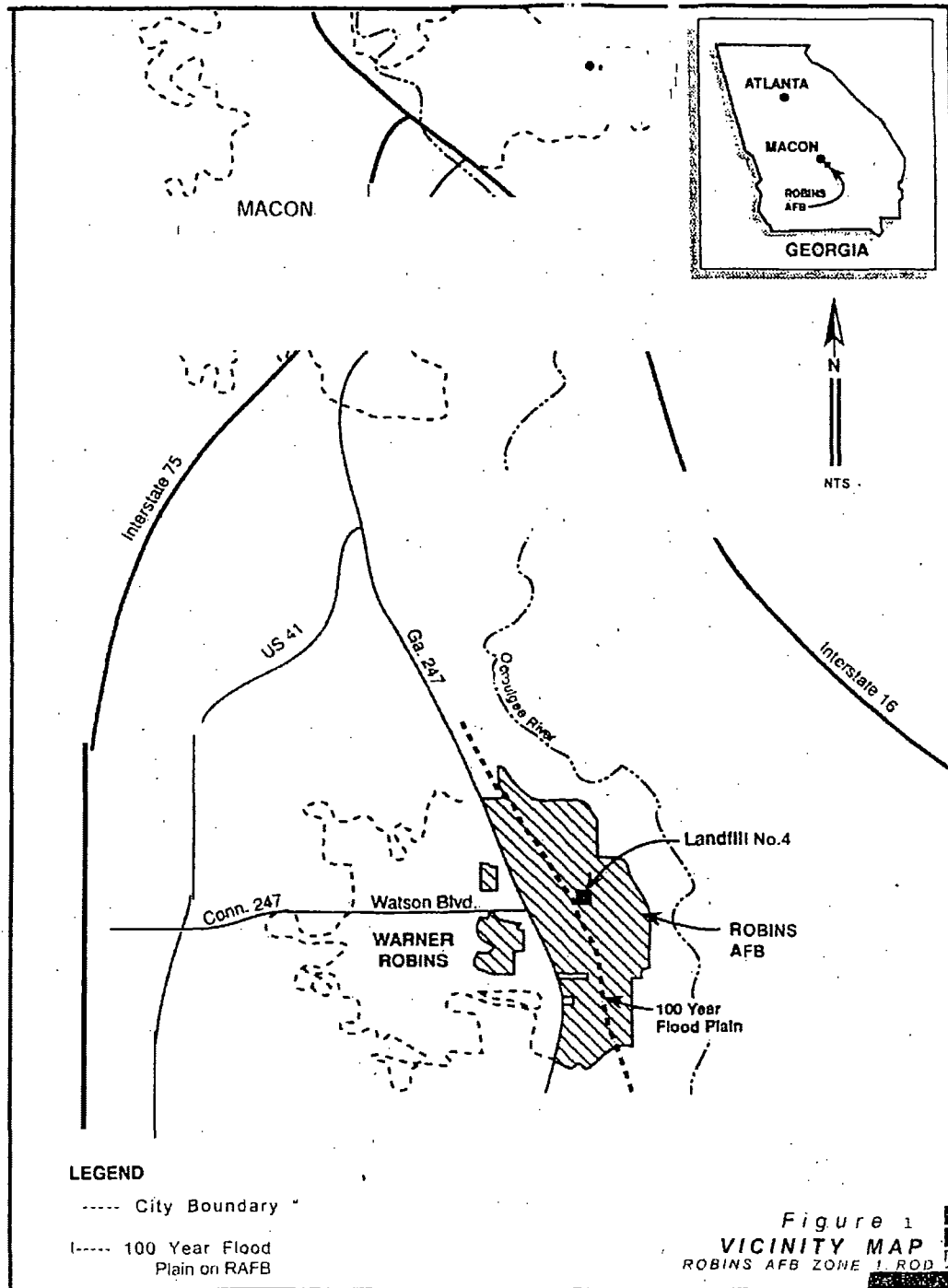
Rust Environment & Infrastructure (Rust E&I), 1997. *Basewide Groundwater Sampling, Spring 1997*, Robins Air Force Base, September 1997. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Rust Environment & Infrastructure (Rust E&I), 1998. *Final Groundwater Treatment System 1<sup>st</sup> Quarter Report Winter 1998*, Robins Air Force Base, April 1998. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Rust Environment & Infrastructure (Rust E&I), 1998. *Final Basewide Groundwater Sampling, Spring 1998*, Robins Air Force Base, October 23, 1998. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

Rust Environment & Infrastructure (Rust E&I), 1998. *Post Remedial Action Report RAFB Landfill No. 4 Cover Renovation*, November 1998. – Prepared for Directorate of Environmental Management Air Force Materiel Command Robins Air Force Base

**Figure 1. Robins AFB Location Map**



**Figure 2. NPL Site Map**



